United States Department of Agriculture

Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

RECREATION LAND IMPROVEMENT AND PROTECTION

CODE 566

(ac)

DEFINITION

Recreation Land Grading and Shaping is reshaping the surface of the land to support recreational land use.

PURPOSE

This practice is used to accomplish one or more of the following purposes:

- Establish or improve effective use of the land area for recreation
- Minimize on-site and off-site damage to resources from recreational land use

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to land areas where surface irregularities, slopes, obstructions, or surface drainage interfere with planned recreational use or where such use requires designed land surfaces.

CRITERIA

General Criteria Applicable to All Purposes

Plan, design, and construct recreational land improvements to comply with applicable Federal, State, and local laws and regulations. Notify landowner and contractor of their responsibility to locate all buried utilities in the project area, including drainage tile and other structural measures. It is also the landowner's responsibility to obtain all necessary permits for project installation prior to construction.

Plan and design the area utilizing accepted landscape architecture principles to be visually pleasing while meeting the recreational needs for the planned area. This includes how the land is shaped, structural elements that are added, and vegetative plantings.

Grading and shaping

Design grading and shaping to meet the recreation needs of the area, to blend aesthetically with and relate to the surrounding landscape, and to minimize onsite and offsite adverse impacts.

Balance cuts and fills for the planned grading and shaping. If sufficient fill from onsite excavation is unavailable, locate suitable borrow areas to meet the needs of the design. Depending upon soil properties, excavation quantities will need to exceed fill quantities by 15–25 percent.

Drainage

Design measures to handle runoff from the site. As applicable, use NRCS Conservation Practice Standards (CPSs) Grassed Waterway (Code 412), Subsurface Drain (Code 606), Surface Drain, Field Ditch (Code 607), and other NRCS CPSs.

Vegetation
Select plant species that are suitable for the planned recreational use and are adapted to the soil, solar exposure, ecological site, and climatic conditions. Use native plant species where possible. Use nonnative species if native plant materials are not adaptable or not proven effective for the planned use.

Spread topsoil or add amendments to soil as necessary to restore or maintain vegetative growth.

Establish vegetation as soon as possible after construction activities. This may include staging of revegetation to meet construction schedules and suitable planting times for the selected species.

Use the criteria in NRCS CPS Critical Area Planting (Code 342) for establishment of grasses and forbs. Use the criteria in NRCS CPS Tree/Shrub Establishment (Code 612) for the establishment of trees and shrubs.

If soil, climatic, or recreational uses prevent the establishment of vegetation on areas exposed to rainfall and runoff use permanent mulch or gravel to protect the soil. Use the criteria in NRCS CPS Mulching (Code 484) for mulching.

If supplemental moisture is needed to establish or maintain vegetation include plans for providing water. For permanent watering systems use the criteria in NRCS CPS Irrigation System, Microirrigation (Code 441).

Additional Criteria for Enhanced Wildlife, Pollinator, and Other Beneficial Organism Habitat

Promote biological diversity to meet the needs of desired wildlife, pollinator, and other beneficial species by planting a diverse mixture of grass, forb, tree, and shrub species. Use approved habitat appraisal guides, evaluation tools, and appraisal worksheets for the respective state. Use “Additional Criteria to Enhance Wildlife, Pollinator, and Beneficial Organism Habitat” found in NRCS CPS Conservation Cover (Code 327).

Locate plantings to reduce pesticide exposures that could harm wildlife, pollinators, and other beneficial organisms.

Additional Criteria for Screens

Visual Screens
Plan the location of visual screens as close to the observer as possible with a density, height, and width that sufficiently blocks the view between the area of concern and the sensitive are.

Noise Screens
Design noise screens that area -

- At least 65 percent dense during the time of the year when noise is a problem.
- As tall as the noise source.
- As close to the source as practicable.
- Twice as long as the distance from the noise source to the listener.

For high speed traffic noise, design barriers that are not less than 65-feet wide. For moderate speed traffic noise, design barriers that are not less than 20-feet wide.

Wind Screens and Windbreaks
Design windbreaks for shelter such that -

- They are oriented as close to perpendicular to the troublesome wind as possible.
- They exceed 65 percent density during the months of the most troublesome wind.
- The area to be protected falls within a leeward distance of 10H, where H is the expected height of the talles row of trees or shrubs in the windbreak at age 20 years.

Use criteria in NRCS CPS Windbreak/Shelterbelt Establishment (Code 380).

CONSIDERATIONS

General Considerations

Evaluate and mitigate the impacts of recreational areas on adjoining lands including residences, utilities, cultural resource areas, threatened and endangered species of plants and animals, wetlands, other environmentally sensitive areas, and areas of special scenic value.

Recreational land use can affect the quality and quantity of both surface and ground water. Assess these impacts and where necessary include provisions for mitigation.

Maintain or improve habitat for fish and wildlife where applicable.

Establishment and maintenance of vegetation can be improved by identifying, salvaging, and stockpiling soil materials on the site that are best suited for plant growth. This soil can then be used as the final cover material.

Recreational areas often contain high-value trees, medicinal herbs, nuts, and fruits. Consider permitting their harvesting or removal provided the loss does not compromise the conservation purpose.

Additional Considerations for Vegetation Establishment

Design areas for tree and shrub plantings to address heating and cooling needs of nearby buildings or other facilities based on local climate. Use proper plant density to meet energy reduction needs. Use deciduous trees on south and west sides of buildings or other facilities to reduce summer cooling costs. Use evergreen windbreaks to reduce impacts of prevailing winter winds and reduce heating costs. Use plants with a potential height growth taller than the building or facility being protected.

In areas where snow drifting is common, ensure that tree and shrub area setbacks are adequate to limit snow deposition in the areas near buildings or other facilities to limit energy used to mechanically move snow.

Ensure that summer tree and shrub densities are low enough that they do not stifle cooling breezes. Note that the direction of summer winds are often from a different direction than winter winds, and plan accordingly.

Additional Considerations for Species Selection

Enhance visual quality by using plant characteristics such as seasonal variation, height, texture, and form. Consider flowers, fall foliage, and/or persistent colorful fruits when designing the planting for the intended purpose.

When designing and locating planted areas, consider the visual quality they provide to the landowner and the public. All plantings should complement natural landscape features.

Include trees and shrubs that produce edible fruits and nuts.

Avoid plants that may be alternate hosts to undesirable pests.

Include a diverse mix of species including native species where possible.

When selecting plant species, consider invasive potential and avoid species that are likely to spread beyond the designed planted area.

Consider maintenance resources and maintenance requirements of the vegetation or plant community when designing the planting and selecting species.

Additional Considerations for Wildlife, Pollinator, and Other Beneficial Organism Habitat

When compatible with the purposes and criteria for application of this practice, modify tree and shrub planted area designs to better address identified wildlife, pollinator, and other beneficial organism needs. Design dimensions and select plants that provide food and shelter for the desired species.

Locate tree and shrub planted areas away from roads to avoid potential conflicts between wildlife and vehicles.

Plan for pollinator and other beneficial organism needs when selecting or siting tree and shrub plantings and when managing the planted areas. Ground-dwelling pollinators and other beneficial organisms may find habitat in an untilled area within the planting.

Habitat may encourage species that pollinate nearby crops. Plant early-blooming trees that provide nectar sources for pollinators and other beneficial organisms early in the spring. Add noncompetitive, adapted forbs and legumes that bloom at times when trees are not flowering.

Where wildlife, pollinator, and other beneficial organism habitat are primary purposes use less-dense herbaceous seeding rates as long as soil loss is within tolerable soil loss limits.

To provide habitat for natural enemies of crop pests, such as predatory and parasitic insects, spiders, insectivorous birds and bats, raptors, and terrestrial rodent predators, select a mix of plant species that provide year-round habitat and food (accessible pollen or nectar) for the desired beneficial species. Consult land grant university integrated pest management recommendations for beneficial habitat plantings to manage the target pest species.

Use a diverse mix of plant species that come into bloom at different times and provide a sequence of blooms throughout the year (e.g., plant at least three flowering species from each of the three bloom periods, spring, summer, and fall).

Where practical, use native species appropriate for the identified resource concern and management objective. Consider reestablishing the native plant community for the site.

If a native cover (other than what was planted) establishes, and this cover meets the intended purpose and objectives, consider the cover adequate.

PLANS AND SPECIFICATIONS

Prepare site-specific plans and specifications for the project. As a minimum, include the following:

- A plan view showing the location and extent of the practice, including location and distances to adjacent features, buildings and other facilities, other structures, and known utilities, contour lines, drainage features, and identification of vegetation and trees to be preserved and protected during construction
- A construction schedule detailing timelines for grading and shaping, vegetation establishment, and necessary inspections
- A grading plan that includes mitigation for potential soil erosion and sedimentation prior to clearing and grading and during project implementation
- A stormwater pollution prevention plan to minimize erosion and limit offsite sedimentation
- A vegetation plan, including details for minimizing removal of existing vegetation and the establishment of new vegetation
- Notification or permit requirements
- Methods and materials used to stabilize areas disturbed by construction
- Construction specifications with site-specific installation requirements

OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan and review it with the landowner or operator prior to practice installation. As a minimum, include—

- Inspecting treated areas annually and after significant storm events to identify repair and maintenance needs.
- Replacing dead trees and shrubs and replanting bare areas in herbaceous plantings to maintain vegetative cover.
- Inspecting and maintaining any tree or shrub protection (e.g., tubes, cages) at least annually and after major storm events, and removing protection when trees or shrubs are large enough.
- Providing supplemental water as needed.
- Thinning or pruning tree and shrub planted areas to maintain function according to NRCS CPS Tree/Shrub Pruning (Code 660).
- Inspecting trees and shrubs periodically to identify appropriate measures necessary to protect them from adverse impacts including insects, diseases, competing vegetation, fire damage from machinery, spray drift, livestock, and wildlife.
- Periodic applications of nutrients according to approved fertilizer recommendations to maintain plant vigor.
- Maintenance practices and activities to minimize disturbance of cover during the reproductive period for desired species where wildlife habitat enhancement is a consideration.
- Periodic burning or mowing when necessary to maintain the health of the plant community.
- Mowing herbaceous plantings, as needed, during the establishment period to reduce competition from weeds.
- Spot-spraying or otherwise controlling noxious weeds or other invasive species to protect insect food sources for grassland nesting birds and forbs and legumes that benefit native pollinators and other wildlife.

REFERENCES

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